Name:

Date:

* 1. Evaluate  (3pts)
  2. Rewrite  as a logarithm in base 12. Round to 3 decimal places. (3pts)
  3. Evaluate  (3pts)
  4. Rewrite  as a logarithm in base 12. Round to 3 decimal places. (3pts)
  5. Evaluate  (3pts)
  6. Rewrite  as a logarithm in base 9. Round to 3 decimal places. (3pts)

1. Expand by using the properties of logs to rewrite each expression as a sum or difference: (3pts each)

a)  b)  c) 

1. Condense the following expressions: (3pts each)

a)  b) 

* 1. Graph *y* = 2 log4(*x* – 3) + 1. (4pts)
  2. Identify the asymptote *with the correct equation*. (2pts)
  3. Find the domain & range. (2pts each)  
       
       
       
     
  4. Graph *y* = -log3(*x* + 5) – 2 . (4pts)
  5. Identify the asymptote *with the correct equation*. (2pts)
  6. Find the domain & range. (2pts each)  
       
     
  7. Graph *y* = 2 log3(*x* + 2) + 1. (4pts)
  8. Identify the asymptote *with the correct equation*. (2pts)
  9. Find the domain & range. (2pts each)  
       
       
       
     

1. You have $5,000 to invest into an account that earns 5.2% interest annually. How many years will it take to triple your money? (Round to the thousandths of a year.) (4pts)

1. Solve for x. **Round to the nearest hundredth** if necessary. (4pts each)
2. 

1. 
2. 